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32294

7590

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EXAMINER

PATEL, NIMESH

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/528,763	<b>Applicant(s)</b> SPIRITO, MAURIZIO	
	<b>Examiner</b> NIMESH PATEL	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-8,10-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-8,10-29 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Detail Office Action***

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Feb. 22, 2008 has been entered.

Claims 1 - 4, 6 – 8, 10 – 29 and 31 are now pending in the application.

***Response to arguments***

2. Applicant's arguments filed Feb. 22, 3008 have been fully considered but they are not persuasive.

The applicant's argument, "Fitch '092 does not describe or suggest selecting and applying one of a plurality of available confidence methods to calculate a region around the estimated location in which the terminal could be located within a specified probability", on page 12, lines 13 – 16.

The examiner respectfully disagrees, "Fitch discloses, receiving first and second inputs from first and second LFEs, storing location information based on the

inputs in the memory, receiving a location request regarding a wireless station from a wireless location application, **selectively** retrieving the location information from memory and outputting a response on the location request to wireless location application. The first and second LFEs preferably may employ different location finding technologies, e.g. GPS, AOA, TDOA and cell/sector technologies (Fitch '092, column 2, lines 43 – 54). Also, the shaded overlap area 404 represents the reduced uncertainty achieved by using multiple inputs. Statically, if the circle 400 represents 95% confidence level regarding the position of the station at t2, and circle 402 represents a nearly 95% confidence level regarding the position of the station at t1, the position of the station can be determined to be in the shaded area 404 with a high level of confidence (Fetch, '092, Fig. 4, column 9, lines 36 - 55, column 11, lines 9 – 31). The multi-input processing facility 217 may use a hyperbola definition from a TDOA system in combination with an angle from an AOA system or other combination of partial LFE outputs, if such combination yields an improved location accuracy. This clearly teaches, to apply one method that estimates the location of mobile, and applying another method that provides more exact location of mobile (Fitch '092, column 10, lines 47 – 57). Here, selectively retrieving the location information, and the confidence levels, along with applying combination reads on the claimed feature, selecting and applying one of a plurality of available confidence methods”.

***Claims Rejection – 35 U.S.C 102(b)***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 4, 7, 8, 11, 12, 14 – 29, and 31 are rejected under 35 U.S.C. 102(b) as anticipated by Fitch US Patent: US 6,321,092 B1 Nov. 20, 2001.

**Regarding claim 1**, Fitch discloses,

selecting and applying one of a plurality of available location methods (receiving first and second inputs from first and second LFEs, storing location information based on the inputs in the memory, receiving a location request regarding a wireless station from a wireless location application, **selectively** retrieving the location information from memory and outputting a response on the location request to wireless location application. The first and second LFEs preferably may employ different location finding technologies, e.g. GPS, AOA, TDOA and cell/sector technologies - column 2, lines 43 – 54. The velocity facility 216, multiple-input facility 217 and tracking facility 218 may use the raw information from the LFEs 208. 204 and 206 to the LFCs of 208, 220 and 212 in place of, or in addition to the LFC outputs. The multi-input processing facility 217 may use a

hyperbola definition from a TDOA system in combination with an angle from an AOA system or other combination of partial LFE outputs, if such combination yields an improved location accuracy or otherwise provides a suitable location determination. Similarly, it may be preferred to use the raw data for velocity or tracking calculations as such data is mathematically closer to the moving wireless station and may more accurately reflect station movement - column 10, lines 44 –58. A wireless location applications interface 224 allows wireless location applications 226, 228 and 230 to selectively access information stored in the LC 220 or prompt one or more of LFEs 202, 204 and/or 206 to initiate a location determination - Figs. 1 and 7) to estimate a location of the mobile terminal (multiple LFE inputs, from one or more LFEs, to be used to allow for wireless station tracking and reduced location uncertainty. The stored location information preferably includes at least location information and corresponding time information for wireless stations, and may further include location uncertainty information, travel speed and direction information. Here, the location uncertainty information, is the claimed feature, estimating a location of the mobile terminal - ABSTRACT, Figs. 1, 2, column 2, lines 37 – 57); and

selecting and applying one of a plurality of available confidence methods to calculate a region around the estimated location in which the terminal could be located within a specified probability (Multiple Location Finding - LFE equipment inputs are used to enhance the location information. The LFS 116 can receive

input information at varying time intervals of varying accuracies and in various formats, and can provide standardized outputs to the application 118. The first and second LFEs preferably may employ different location findings, e.g. GPS, AOA, TDOA and cell/sector technologies Multiple inputs may also be co-processed for enhanced accuracy. A number of different location finding technologies are depicted in Figs. 3A – 3E, - ABSTRACT, Figs. 1, 2, 3A – 3E, column 2, line 42 – column 3, line 47, column 5, line 18 - column 7, line 30, column 7, line 42 – column 8, line 22, column 8, line 56 – column 9, line 16, column 9, line 56 – column 10, line 18, column 10, line 58 – column 11, line 8.

Also, Fitch discloses, shaded overlap area 404 represents the reduced uncertainty achieved by using multiple inputs. Statically, if the circle 400 represents 95% confidence level regarding the position of the station at t2, and circle 402 represents a nearly 95% confidence level regarding the position of the station at t1, the position of the station can be determined to be in the shaded area 404 with a high level of confidence - Fig. 4, column 9, lines 36 - 55, column 11, lines 9 – 31.

The multi-input processing facility 217 may use a hyperbola definition from a TDOA system in combination with an angle from an AOA system or other combination of partial LFE outputs, if such combination yields an improved location accuracy. This clearly teaches, to apply one method that estimates the

location of mobile, and applying another method that provides more exact location of mobile - column 10, lines 47 – 57).

**Regarding claim 2,** Fitch discloses,

a method according to claim 1, wherein selected location method estimates the location of the mobile terminal using multiple sources of information (the first and second LFEs preferably may employ different location findings, e.g. GPS, AOA, TDOA and cell/sector technologies - Figs. 2, 3A – 3D, column 2, lines 52 – 54. The LFE determines location information based on two or more cell sites, a reading from one of the cell sites may be used in conjunction with other location, e.g. cell sector information, to make a location determination - column 3, lines 42 – 47).

**Regarding claim 3,** Fitch discloses,

a method according to claim 2, wherein the communication network comprises multiple cells and each source of information comes from a respective one of the multiple cells (in the case of LFEs that determine location based on readings obtained relative to two or more cell sites, a reading from one of the cell sites may be used in conjunction with other location, e.g. cell sector information, to make a location determination - column 3, lines 42 – 47).

**Regarding claim 4,** Fitch discloses,

a method of claim 2, wherein the mobile terminal is served by multiple cells of the communication network simultaneously and each source of information comes from a respective one of the multiple cells (in the case of LFEs that determine location based on readings obtained relative to two or more cell sites, a reading from one of the cell sites may be used in conjunction with other location, e.g. cell sector information, to make a location determination. Here, as the mobile location information is obtained by two or more cell sites, and reading from one cell sites is used in conjunction with other sites, it indirectly shows that the mobile is being served by multiple cells at the same time - column 3, lines 42 – 47).

**Regarding claim 7,** Fitch discloses,

a method according to claim 1, wherein the available location methods include an algorithm using information from one cell of the communications network, an algorithm using information from multiple cells of the communications network, and a numerical method using information from multiple cells of the communications network (the velocity facility 216, multiple-input facility 217 and tracking facility 218 may use the raw information from the LFEs 208. 204 and 206 to the LFCs of 208, 220 and 212 in place of, or in addition to the LFC outputs. The multi-input processing facility 217 may use a hyperbola definition from a

TDOA system in combination with an angle from an AOA system - or other combination of partial LFE outputs, if such combination yields an improved location accuracy or otherwise provides a suitable location determination. Similarly, it may be preferred to use the raw data for velocity or tracking calculations as such data is mathematically closer to the moving wireless station and may more accurately reflect station movement - column 10, lines 44 –58.

A wireless location applications interface 224 allows wireless location applications 226, 228 and 230 to selectively access information stored in the LC 220 or prompt one or more of LFEs 202, 204 and/or 206 to initiate a location determination - Figs. 1 and 7).

**Regarding claim 8,** Fitch discloses,

a method according to claim 1, wherein the location method can be selected by setting a variable (the velocity facility 216, multiple-input facility 217 and tracking facility 218 may use the raw information from the LFEs 208, 204 and 206 to the LFCs of 208, 220 and 212 in place of, or in addition to the LFC outputs. The multi-input processing facility 217 may use a hyperbola definition from a TDOA system in combination with an angle from an AOA system - or other combination of partial LFE outputs, if such combination yields an improved location accuracy or otherwise provides a suitable location determination. Similarly, it may be

preferred to use the raw data for velocity or tracking calculations as such data is mathematically closer to the moving wireless station and may more accurately reflect station movement - column 10, lines 44 –58. A wireless location applications interface 224 allows wireless location applications 226, 228 and 230 to **selectively** access information stored in the LC 220 or **prompt one or more of** LFEs 202, 204 and/or 206 to initiate a location determination - Figs. 1 and 7. The Wireless Location Interface – WLI 224 allows the applications to include specification with a location request **one or more parameters**: timeliness, accuracy, confidence level, most recent available, most accurate, one time or ongoing monitoring of a mobile station etc. - column 11, lines 9 – 31).

**Regarding claim 11**, Fitch discloses,

a method according to claim 1, wherein the available confidence methods for calculating the region include: an ellipse algorithm, a circle algorithm, an arc algorithm, and a polygon algorithm (determining location information into standardized location information, as geographical location coordinates and a region of uncertainty. The uncertainty region may be of any shape – e.g. polygonal, depending on the nature of the LFEs employed. For circular region an uncertainty is radius, for two dimensional location coordinates – longitude and longitude with an uncertainty radius applied relative to the location coordinates. The standard format may allow for altitude coordinates, non-circular regions and

other parameters -Figs. 3A – 3E, and column 7, line 63 through column 8, line 8).

**Regarding claim 12,** Fitch discloses,

a method according to claim 1, wherein the confidence methods include use of a parameter to calculate the region such that the probability of the mobile's exact location being in that region equals the parameter r(Multiple Location Finding - LFE equipment inputs are used to enhance the location information. The LFS 116 can receive input information at varying time intervals of varying accuracies and in various formats, and can provide standardized outputs to the application 118. The first and second LFEs preferably may employ different location findings, e.g. GPS, AOA, TDOA and cell/sector technologies Multiple inputs may also be co-processed for enhanced accuracy. A number of different location finding technologies are depicted in Figs. 3A – 3E - ABSTRACT, Figs. 1, 2, 3A – 3E, column 2, line 42 – column 3, line 47, column 5, line 18 - column 7, line 30, column 7, line 42 – column 8, line 22, column 8, line 56 – column 9, line 16, column 9, line 56 – column 10, line 18, column 10, line 58 – column 11, line 8).

**Regarding claim 14,** Fitch discloses,

a method according to claim 1, wherein the estimating a location of the mobile terminal comprises selecting and applying a preferred method for estimating the

location from a number of available methods, and wherein the method further comprises applying a rule that specifies which of the possible methods for estimating the location is used together with what available confidence methods for calculating the region (Multiple Location Finding - LFE equipment inputs are used to enhance the location information. The LFS 116 can receive input information at varying time intervals of varying accuracies and in various formats, and can provide standardized outputs to the application 118. The first and second LFEs preferably may employ different location findings, e.g. GPS, AOA, TDOA and cell/sector technologies Multiple inputs may also be co-processed for enhanced accuracy. A number of different location finding technologies are depicted in Figs. 3A – 3E (ABSTRACT, Figs. 1, 2, 3A – 3E, column 2, line 42 – column 3, line 47, column 5, line 18 - column 7, line 30, column 7, line 42 – column 8, line 22, column 8, line 56 – column 9, line 16, column 9, line 56 – column 10, line 18, column 10, line 58 – column 11, line 8).

Fitch also discloses, determining location information into standardized location information, as geographical location coordinates and a region of uncertainty. The uncertainty region may be of any shape – e.g. polygonal, depending on the nature of the LFEs employed. For circular region an uncertainty is radius, for two dimensional location coordinates – longitude and longitude with an uncertainty radius applied relative to the location coordinates. The standard format may allow for altitude coordinates, non-circular regions and other parameters - Figs. 3A –

3E, and column 7, line 63 through column 8, line 8).

**Regarding claim 15**, Fitch discloses,

a method according to claim 1 wherein the selected location method for estimating a location further comprises modeling a cell of the communication network (Multiple Location Finding - LFE equipment inputs are used to enhance the location information. The LFS 116 can receive input information at varying time intervals of varying accuracies and in various formats, and can provide standardized outputs to the application 118. The first and second LFEs preferably may employ different location findings, e.g. GPS, AOA, TDOA and cell/sector technologies Multiple inputs may also be co-processed for enhanced accuracy. A number of different location finding technologies are depicted in Figs. 3A – 3E - ABSTRACT, Figs. 1, 2, 3A – 3E, column 2, line 42 – column 3, line 47, column 5, line 18 - column 7, line 30, column 7, line 42 – column 8, line 22, column 8, line 56 – column 9, line 16, column 9, line 56 – column 10, line 18, column 10, line 58 – column 11, line 8.

The multi-input processing facility 217 may use a hyperbola definition from a TDOA system in combination with an angle from an AOA system or other combination of partial LFE outputs, if such combination yields an improved location accuracy. This clearly teaches, to apply one method that estimates the

location of mobile, and applying another method that provides more exact location of mobile - column 10, lines 47 – 57).

**Regarding claim 16,** Fitch discloses,

a method according to claim 1, wherein selected confidence method for calculating a region around the estimated location in which the mobile terminal could be located further comprises modeling a cell of communications network (Multiple Location Finding - LFE equipment inputs are used to enhance the location information. The LFS 116 can receive input information at varying time intervals of varying accuracies and in various formats, and can provide standardized outputs to the application 118. The first and second LFEs preferably may employ different location findings, e.g. GPS, AOA, TDOA and cell/sector technologies Multiple inputs may also be co-processed for enhanced accuracy. A number of different location finding technologies are depicted in Figs. 3A – 3E - ABSTRACT, Figs. 1, 2, 3A – 3E, column 2, line 42 – column 3, line 47, column 5, line 18 - column 7, line 30, column 7, line 42 – column 8, line 22, column 8, line 56 – column 9, line 16, column 9, line 56 – column 10, line 18, column 10, line 58 – column 11, line 8), along with the rejections for claim 11 above.

The multi-input processing facility 217 may use a hyperbola definition from a

TDOA system in combination with an angle from an AOA system or other combination of partial LFE outputs, if such combination yields an improved location accuracy. This clearly teaches, to apply one method that estimates the location of mobile, and applying another method that provides more exact location of mobile - column 10, lines 47 – 57).

**Regarding claim 17,** Fitch discloses,

a method according to claim 1, wherein the communications network comprises a service area, the service area containing a number of cells including a cell in which the mobile terminal is located (is essentially similar to claim 1 above. The examiner interprets, finding the location of the mobile terminal in communications network, as in claim 1 above. The network having MSC, base stations, and the cells, teaches the claimed feature, “the service area containing a number of cells including a cell in which the mobile terminal is located).

**Regarding claim 18,** Fitch discloses,

a method according to claim 17, wherein the service area is represented by the geographical region served by the cells in the service area (is essentially similar to claim 1 above. The examiner interprets, finding the location of the mobile terminal in communications network, as in claim 1 above. The network having

MSC, base stations, and the cells, teaches the claimed feature, “the service area is represented by the geographical region served by the cells in the service area”.

**Regarding claim 19**, which is essentially similar to claim 11 above, and is rejected on the same ground.

**Regarding claim 20**, which is essentially similar to claim 1 above, and is rejected on the same ground.

**Regarding claim 21**, which is essentially similar to claim 1 above, and is rejected on the same ground.

**Regarding claim 22**, which is essentially similar to claim 11 above, and is rejected on the same ground.

**Regarding claim 23**, which is essentially similar to claim 1 above, and is rejected on the same ground.

**Regarding claim 24**, which is essentially similar to claim 11 above, and is rejected on the same ground.

**Regarding claim 25**, which is essentially similar to claim 1 above, and is rejected on the same ground.

**Regarding claim 26**, which is essentially similar to claim 1 above, and is rejected on the same ground.

A number of different location finding technologies are depicted in Figs. 3A – 3E (ABSTRACT, Figs. 1, 2, 3A – 3E, column 2, line 42 – column 3, line 47, column 5, line 18 - column 7, line 30, column 7, line 42 – column 8, line 22, column 8, line 56 – column 9, line 16, column 9, line 56 – column 10, line 18, column 10, line 58 – column 11, line 8), as in claim 1 above.

**Regarding claim 27**, which is essentially similar to claim 1 above, and is rejected on the same ground.

**Regarding claim 28**, which is essentially similar to claim 1 above, and is rejected on the same ground.

**Regarding claim 29**, which is essentially similar to claim 1 above, and is rejected on the same ground.

**Regarding claim 31**, Fitch discloses,

an estimator configured to select and apply one method from a plurality of location methods (receiving first and second inputs from first and second LFEs, storing location information based on the inputs in the memory, receiving a location request regarding a wireless station from a wireless location application, **selectively** retrieving the location information from memory and outputting a response on the location request to wireless location application. The first and second LFEs preferably may employ different location finding technologies, e.g. GPS, AOA, TDOA and cell/sector technologies - column 2, lines 43 – 54. The velocity facility 216, multiple-input facility 217 and tracking facility 218 may use the raw information from the LFEs 208. 204 and 206 to the LFCs of 208, 220 and 212 in place of, or in addition to the LFC outputs. The multi-input processing facility 217 may use a hyperbola definition from a TDOA system in combination with an angle from an AOA system or other combination of partial LFE outputs, if such combination yields an improved location accuracy or otherwise provides a suitable location determination. Similarly, it may be preferred to use the raw data for velocity or tracking calculations as such data is mathematically closer to the moving wireless station and may more accurately reflect station movement - column 10, lines 44 –58. A wireless location applications interface 224 allows wireless location applications 226, 228 and 230 to selectively access information stored in the LC 220 or prompt one or more of LFEs 202, 204 and/or 206 to initiate a location determination - Figs. 1 and 7) to estimate a location of a mobile terminal in a communications network (multiple LFE inputs, from one or more

LFEs, to be used to allow for wireless station tracking and reduced location uncertainty. The stored location information preferably includes at least location information and corresponding time information for wireless stations, and may further include location uncertainty information, travel speed and direction information. Here, the location uncertainty information, is the claimed feature, estimating a location of the mobile terminal - ABSTRACT, Figs. 1, 2, column 2, lines 37 – 57); and

a calculator configured to select and apply one of a plurality of available confidence methods to calculate a region around the estimated location in which the terminal could be located within a specified probability (Multiple Location Finding - LFE equipment inputs are used to enhance the location information. The LFS 116 can receive input information at varying time intervals of varying accuracies and in various formats, and can provide standardized outputs to the application 118. The first and second LFEs preferably may employ different location findings, e.g. GPS, AOA, TDOA and cell/sector technologies Multiple inputs may also be co-processed for enhanced accuracy. A number of different location finding technologies are depicted in Figs. 3A – 3E, - ABSTRACT, Figs. 1, 2, 3A – 3E, column 2, line 42 – column 3, line 47, column 5, line 18 - column 7, line 30, column 7, line 42 – column 8, line 22, column 8, line 56 – column 9, line 16, column 9, line 56 – column 10, line 18, column 10, line 58 – column 11, line 8. Also, Fitch discloses, shaded overlap area 404 represents the reduced

uncertainty achieved by using multiple inputs. Statically, if the circle 400 represents 95% confidence level regarding the position of the station at t2, and circle 402 represents a nearly 95% confidence level regarding the position of the station at t1, the position of the station can be determined to be in the shaded area 404 with a high level of confidence - Fig. 4, column 9, lines 36 - 55, column 11, lines 9 - 31. The multi-input processing facility 217 may use a hyperbola definition from a TDOA system in combination with an angle from an AOA system or other combination of partial LFE outputs, if such combination yields an improved location accuracy. This clearly teaches, to apply one method that estimates the location of mobile, and applying another method that provides more exact location of mobile - column 10, lines 47 - 57).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6, 10, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitch US Patent: US 6,321,092 B1 Nov. 20, 2001, and in view of Raith US Patent: US 6,040,800 Mar. 21, 2000.

**Regarding claim 6,** Fitch discloses all the claimed features,

but, is silent on, “a method of claim 1, wherein if the selected location method for estimating the location is unsuccessful when applied, the method further comprises sequentially selecting and applying one or more others of the available location methods until a selected method is successfully applied”.

Raith teaches, TDOA measurements can be used unless the GDOP parameter of the received signals passes a predetermined threshold, at which point TOA measurements can be used to obtain the mobile unit's position. The central processing center selects one of the method based on the predetermined threshold. Here, if the signal is below threshold, reads on the claimed feature, the location estimating is unsuccessful, and in this case the central processing center applies another method to find out the location of mobile unit (column 2, lines 28 – 37, column 7, lines 17 - 23, and Raith – claims 1, 6 and 12).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify multiple input data management for wireless location based

application of Fitch (Fitch, Figs. 1 and 7), wherein, the Location Finding System 116, would have incorporated the teaching of Raith i.e. selecting another method at the time when the another method failed to collect the location of mobile unit (Raith, column 2, lines 28 - 37) for accurate estimation of mobile unit location with the alternative method (Raith, column 2, lines 28 – 37, column 7, lines 17 - 23, and Raith – claims 1, 6 and 12).

**Regarding claim 10**, Fitch discloses all the claimed features,

but, is silent on, “a method of claim 1, wherein if the selected confidence method for calculating a region is unsuccessful when applied, the method further comprises sequentially selecting and applying other of the available confidence methods until a selected method is successfully applied”.

Raith teaches, TDOA measurements can be used unless the GDOP parameter of the received signals passes a predetermined threshold, at which point TOA measurements can be used to obtain the mobile unit's position. The central processing center selects one of the method based on the predetermined threshold. Here, if the signal is below threshold, reads on the claimed feature, the location estimating is unsuccessful, and in this case the central processing center applies another method to find out the location of mobile unit (column 2, lines 28 – 37, column 7, lines 17 - 23, and Raith – claims 1, 6 and 12).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify multiple input data management for wireless location based application of Fitch (Fitch, Figs. 1 and 7), wherein, the Location Finding System 116, would have incorporated the teaching of Raith i.e. selecting another method at the time when the another method failed to collect the location of mobile unit (Raith, column 2, lines 28 - 37) for accurate estimation of mobile unit location with the alternative method (Raith, column 2, lines 28 – 37, column 7, lines 17 - 23, and Raith – claims 1, 6 and 12).

**Regarding claim 13,** Fitch discloses all the claimed features,

a method according to claim 1, wherein the estimating a location of the mobile terminal comprises selecting and applying a preferred method for estimating the location from a number of available methods, and wherein the selected location method for estimating the location and the selected confidence method for calculating the region together result in a number of shapes of region in which the mobile terminal could be located, the shape being dependent on the selected confidence method for calculating the region (Multiple Location Finding - LFE equipment inputs are used to enhance the location information. The LFS 116 can receive input information at varying time intervals of varying accuracies and in various formats, and can provide standardized outputs to the application 118. The first and second LFEs preferably may employ different location findings, e.g.

GPS, AOA, TDOA and cell/sector technologies Multiple inputs may also be co-processed for enhanced accuracy. A number of different location finding technologies are depicted in Figs. 3A – 3E (ABSTRACT, Figs. 1, 2, 3A – 3E, column 2, line 42 – column 3, line 47, column 5, line 18 - column 7, line 30, column 7, line 42 – column 8, line 22, column 8, line 56 – column 9, line 16, column 9, line 56 – column 10, line 18, column 10, line 58 – column 11, line 8).

Fitch also discloses, determining location information into standardized location information, as geographical location coordinates and a region of uncertainty. The uncertainty region may be of any shape – e.g. polygonal, depending on the nature of the LFEs employed. For circular region an uncertainty is radius, for two dimensional location coordinates – longitude and longitude with an uncertainty radius applied relative to the location coordinates. The standard format may allow for altitude coordinates, non-circular regions and other parameters - Figs. 3A – 3E, and column 7, line 63 through column 8, line 8),

but, is silent on, “**preferred method** for estimating the location from a number of available methods”.

Raith teaches, TDOA measurements can be used unless the GDOP parameter of the received signals passes a predetermined threshold, at which point TOA measurements can be used to obtain the mobile unit's position. The central

processing center selects one of the method based on the predetermined threshold. Here, if the signal is below threshold, reads on the claimed feature, the location estimating is unsuccessful, and in this case the central processing center applies another method to find out the location of mobile unit (column 2, lines 28 – 37, column 7, lines 17 - 23, and Raith – claims 1, 6 and 12).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify multiple input data management for wireless location based application of Fitch (Fitch, Figs. 1 and 7), wherein, the Location Finding System 116, would have incorporated the teaching of Raith i.e. selecting another method at the time when the another method failed to collect the location of mobile unit (Raith, column 2, lines 28 - 37) for accurate estimation of mobile unit location with the alternative method (Raith, column 2, lines 28 – 37, column 7, lines 17 - 23, and Raith – claims 1, 6 and 12).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Mannoja teaches, location services to the mobile station, and selecting another available methods in the case of failure of the selected method. US Patent: 7,069,023 B2 Jun. 27, 2006.
2. Matsuda teaches, location system for operating mobile terminal as a responsible location for selecting a positioning method. US PGPub: US 2004/0185870 A1 Sep. 23, 2004.
3. Yost teaches, a combination of Time Difference of Arrival – TDOA and Timing Advance – TA location measurement techniques enables Automatic Location Identification – ALI to telecommunications system

US Patent: 5,987,329 Nov. 16, 1999.

### **Contact Information**

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael, Perez-Gutierrez, can be reached at (571) 272-7915.

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